

Unit 11 – Climate Change (Ch.16)

Chapter 16.1 – What Is Climate Change?

1. Climate change is a change in long-term average _____ patterns. Global warming on the other hand is an increase in the average _____ of Earth's surface and troposphere.
2. How do some gases in our atmosphere act like a greenhouse but on a global scale?
3. If it wasn't for greenhouse gases, the world would be much _____ than it is today. The enhanced greenhouse effect is a phenomenon that we are currently experiencing today due to an increase in _____ of greenhouse gases in our atmosphere.
4. How is the warming potential of a greenhouse gas measured? Use an example in your description.
5. Water vapour is naturally in the atmosphere due to the _____. Humans have increased the amount of this greenhouse gas in the atmosphere by the _____ of fossil fuels and wood.
6. _____ is naturally in the atmosphere due to the _____ of organic matter. Humans have increased the amount of this greenhouse gas in the atmosphere by _____ and from decaying organic matter in _____.
7. Humans have increased the amount of _____, another greenhouse gas, in the atmosphere by using _____.
8. Humans introduced various _____ (very strong greenhouse gases) into the atmosphere by the use of them in _____ and _____. Chlorofluorocarbons have also contributed to the depletion of the ozone layer.

9. Carbon sinks are beneficial in removing _____ from the atmosphere.
10. List six pieces of evidence that have been connected with climate change.
11. Analysis of tree growth rings can provide us insight into the _____ and precipitation during the period the rings were _____.
12. Ice cores can be analyzed to find the level of _____ that was in the atmosphere when the ice formed.
13. Analyzing the _____ in layers at the bottom of ocean floors and lake beds can give us insight into the _____ and erosion that occurred during the time the layer formed.
14. The shells of corals show _____ bands of growth that can give use insight into the history of ocean _____.
15. The IPCC is the _____, a group of over 2500 climatologists from many countries that are seen as the leading authority on global climate change. There is consensus among this group that the Earth has increased in temperature _____ since the 1980's, that human activities have contributed to this increase, and that _____ gases will likely speed up _____.
16. There are some scientists that are _____ sceptical about global warming. For example, some scientists believe that most warming occurs over _____ and not over _____.
17. How is soot linked to global warming?
18. _____ are great at helping us predict what climate change may bring in the future. However, these models cannot bring _____ certainty.

Chapter 16.2 – Influences on Climate and Climate Change

1. _____ is a natural phenomenon that has the greatest affect on global climate. It is believed to be caused by changes in the normal patterns of the southeast _____. In North America, it pushes the polar jet stream farther _____. This prevents cold _____ from reaching eastern _____ as well as the United States, and therefore bringing milder _____.
2. Warm ocean water is separated from cold ocean water in a region called the _____.
3. How does El Niño affect the fisheries of British Columbia?
4. The opposite to El Niño is _____. This cycle bring colder-than-average ocean temperatures and usually brings _____ winters to western Canada.
5. How can a volcanic eruption bring cooler temperatures to a region?
6. The greatest impact on _____ in the past fifty years has been the increase in _____, especially carbon dioxide.
7. The largest source of greenhouse gas emissions has been the burning of _____. The next greatest source is _____. Trees are _____ as they remove carbon dioxide from the _____. Burning of trees is even worse, as it not only removes a valuable carbon sink, but it also contributes even more _____ into our atmosphere.
8. A greenhouse gas that has increased in concentration in our atmosphere due to agriculture is _____.
9. Decaying _____ in landfills contributes the greenhouse gas _____ into the atmosphere.

Chapter 16.3 – Potential Impact of Climate Change

1. The direct impact of global warming is expected to be on the _____, bringing major consequences for organisms and humans.
2. Areas that have long and cold winters may see global warming as a positive. Explain why global warming however is expected to bring many more negative than positive consequences, especially in Canada.
3. Explain how global warming could impact forests.
4. Many animals will be affected by global warming. Salmon may find it increasingly difficult to migrate upstream, as lower _____ and early _____ will decrease water levels in rivers, making them much more difficult for the fish to navigate.
5. Climate change in Polar Regions is expected to be among the largest and most _____ of any region on Earth. As temperature rises in Polar Regions, _____ that prevents water drainage, may begin to _____. This would increase the potential for _____ which also affects the _____ and _____ systems.
6. The Arctic ice has also started to show a significant decrease as a result of global warming. Scientists predict that the Arctic Ocean may be free of summer ice by the year _____.
7. What impact does global warming have on human health and safety?
8. The sea levels are also _____ as a result of global warming. The total volume of the oceans is rising as a result of _____ and _____ due to temperature rise. This brings a major risk of _____ in areas near water.
9. British Columbia has started developing plans to generate new electricity from _____ sources. We have also started practice sustainable _____ management to preserve our valuable carbon sinks.

Vocabulary to Know

Write a concise definition of each of these terms found in this chapter.

Carbon dioxide equivalent -

Carbon sink -

Carbon sources -

Climate change -

El Niño -

Enhanced greenhouse effect -

Global warming -

Greenhouse gases -

La Niña -

Ozone layer -

Permafrost -

Thermocline -